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Progress Report on
Evaluation of Commercial Utility of ERTS-A
Imagery in Structural Reconnaissance for
Minerals and Petroleum

ERTS-A Proposal Number
MMC-083

Principal Investigator
PR-181
DONALD F. SAUNDERS

Reporting Period
August 29, 1972 through October 31, 1972

Prepared by
Texas Instruments Incorporated

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UTILITY OF ERTS-A IMAGERY IN STRUCTURAL
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I PROGRAM OBJECTIVE

The objective of this study is to evaluate, from the commercial viewpoint, the feasibility of ERTS-A imagery as a medium for interpreting and mapping large-scale structural lineaments in both Precambrian Shield areas and basins containing younger sediments. Successful completion of this program could lead to Continental Plate tectonic interpretation from purchased ERTS-type imagery which would be useful to mining or petroleum companies for guiding and/or interpreting reconnaissance prospecting operations.

II SUMMARY OF WORK (August 29 - October 31, 1972)

Work performed during the reported period has been preliminary in nature; i. e., since imagery had not been received in the format originally requested, topographic maps were ordered, obtained, assembled and reduced to a scale of 1:1,000,000 to provide comparative index maps for the geographic areas of concern. In addition some publication research has been completed along with initial image quality evaluations of transparencies which we received. Thus the data delays (discussed in more detail below in Section IV) have not completely impaired progress on necessary contract work but we are unable to make any statements regarding preliminary interpretation results.

III WORK SCHEDULE

Work is approximately one month behind due to a lack of ERTS-A data in positive print format.

IV PROBLEMS

Due to a late contract date a considerable period of time expired before any imagery was received. All data received

through October was in the form of positive transparencies. We originally had requested positive prints, but were made aware through the ERTS Investigator's Bulletin, Vol. A, No. 7 that we would receive negative transparencies. However transparencies of either kind are not suitable for preparing the necessary mosaics. Through the much appreciated efforts of Mr. G. R. Stonesifer we are now expecting to receive positive prints for the construction of large mosaics as required in our analyses.

Since no RBV imagery has been obtained, it is our plan to put proportionately increased emphasis and effort on the MSS data.

Initial evaluation of the first shipment of positive prints (received November 3rd) indicates that prints from MSS bands 1 and 2 appear to be too dark or "muddy" to be useful; as compared to bands 3 and 4 which appear to be quite adequate for our analysis.

V PLANS FOR NEXT REPORTING PERIOD

The work is expected to proceed in imagery indexing and mosaicing. If Phase III approval is obtained so that work can continue in December, it is expected that preliminary mosaics will be constructed and analyzed using MSS imagery. Area coverage will depend on the availability of imagery.

VI SIGNIFICANT RESULTS

No significant results have been obtained during this reporting period due to a lack of data in the proper positive print format.

VII PUBLISHED ARTICLES

No articles have been published during this reporting period.

VIII CHANGE RECOMMENDATIONS

If anything can be done to reduce the density and improve the contrast of imagery collected in MSS bands 1 and 2 it should be done.

IX CHANGES IN STANDING ORDER FORMS

None

X DESCRIPTOR FORM INCLUSIONS

None

XI PERSONNEL CHANGES

No significant changes have been made in this reporting period.

XII ADEQUACY OF FUNDS

Funding is adequate through November. However, approval for Phase III effort will be required by the end of November if there is to be adequate funding for December efforts. Such approval will be requested during November.